BOOK REVIEW

DANIEL CHAMOVITZ. 2013 (first paperback edition). **What A Plant Knows: A Field Guide to the Senses.** (ISBN-13: 978-0-374-53388-5, pbk.). Scientific American / Farrar, Straus and Giroux, 18 West 18th Street, New York, New York 10011 U.S.A. (**Orders:** us.macmillan.com). $14.00, 192 pp., 5 ⅜" × 8 ¼".

In *What A Plant Knows*, Daniel Chamovitz does an exceptional job at presenting a brief introduction regarding how plants experience the world through sensory perception; that is to say, what does a plant feel, hear, smell, or even know? Attempting to enlighten the popular reader who may lack a degree in botany but simply wishes to learn how or if plants are capable of gaining and interpreting knowledge through sensory perception, Chamovitz does well when explaining these biological processes unique to plants as he abstains from isolating the laymen through unexplained terminology or an absence of simplistic illustrations to convey his points and enlighten his readers. Amazingly, as a writer Chamovitz has produced a decent way to give an intriguing yet brief survey on this topic which not only abridges his own decades of research but the general findings of the scientific community as well, all the while keeping his outline clear, his pace pleasantly brisk, and the presentation of his ideas easily accessible.

The book itself is divided into six chapters, each one respectively addressing what a plant sees, smells, feels, hears, how a plant knows where it is, and what a plant remembers. Interestingly, while the reader may have picked up this text with only plants in mind, they are bound to learn something about themselves in the process: while addressing whether a plant has a certain level of sensory perception, Chamovitz is forced to define these senses, especially beginning with how humans experience such phenomena, and then differentiate between how plants utilize the same type of sense differently regarding various aspects such as their biology, reaction, etc. Thus through an increased awareness of their own body, the reader is left with a better understanding of both similarities and differences in how plants interpret and react to the world around them.

Another layer of interest comes in Chamovitz's decision to relate how mankind discovered that plants have capabilities that resemble such actions as "seeing" and "smelling." From Darwin playing his bassoon for his plants to Thomas Knight strapping his seedlings onto a make-shift centrifuge in the form of the humble water-wheel, curious stories arise in *What A Plant Knows* of scientists who failed or succeeded, sometimes aided by pure accident, but eventually contributing to the knowledge mankind has been able to accumulate over the years regarding how plants act and react. As active and intelligent as the science in *What A Plant Knows* portrays plants, perhaps it is no wonder that Aristotle thought plants had souls!

Admirably, Chamovitz is not on a personal crusade to prove plants can sense things if the data is not there. Chamovitz's lack of bias seems evident in his chapter addressing whether plants can hear like humans; the chapter itself feels rather bare because in terms of research, Chamovitz admits, there is still far more work to be done. Chamovitz seems quite comfortable in acknowledging this and is in no hurry to postulate wild speculations in order to argue that plants have all the senses a human does. His goal is not to insist that plants experience the world just as humans do. Rather he wishes to prompt new ways of thinking about the senses, plants, and even humans themselves.

Ultimately, *What A Plant Knows* is a fascinating introduction for the popular reader to the world of sensory perception in the realm of plants. For someone unacquainted with the vast world of biological processes in the botanical field, this accessible text serves as an excellent way to both learn and appreciate more of the complex facets of plants themselves, as well as the field of botany, those who study it, and even the senses of humanity.—*Alexander Petty, Historian and Volunteer at the Botanical Research Institute of Texas, Fort Worth, Texas, U.S.A.*